

USSN: 09/622,104  
Amdt. Dated October 22, 2003  
Reply to Office Action of August 14, 2003

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**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A compound of the formula:

$X_1-X_2-X_3$ -Leu- $X_4$ -Glu-Leu- $X_5$ - $X_6$ -Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn- $X_7$ - $Z_3$  [SEQ.ID.NO.27]

wherein:

(a)  $X_1$  is

(i) a group of two amino acid residues selected from the group consisting of Leu-Leu, Val-Leu, Ile-Leu, tert-Leu-Leu, Nle-Leu, and Ala-Thr, and N-acylated derivatives thereof;  
or

(ii) the group  $Z_1$ -Ser-Thr- $Z_2$ -Val-Leu [SEQ.ID.NO. 28] wherein  $Z_1$  is an amino acid residue selected from the group consisting of Leu, Val, Ile, tert-Leu, Nva, Abu, and Nle or an N-acylated derivative thereof or  $Z_1$  is an alkanoyl group; and  $Z_2$  is a amino acid residue selected from the group consisting of Ala, Ser, Cys, and Thr;

(b)  $X_2$  is an amino acid residue selected from the group consisting of Gly, Glu, Asn or Aib;

(c)  $X_3$  is an amino acid residue selected from the group consisting of Arg, Orn, Lys and e-amidated derivatives thereof;

(d)  $X_4$  is a group of two amino acid residues selected from the group consisting of Ser-Gln, Thr-Gln, Ala-Asn and Thr-Asn;

(e)  $X_5$  is an amino acid residue selected from the group consisting of His, Aib, Ile, Leu and Val;

(f)  $X_6$  is an amino acid residue selected from the group consisting of Arg, Orn and Lys and e-amidated derivatives thereof;

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(g)  $X_7$  is a group having 6 amino acid residues selected from the group consisting of

- (i) Thr-Gly-Ser-Asn-Thr-Tyr[[-NH<sub>2</sub>]] [SEQ.ID.NO. 29];
- (ii) Thr-Gly-Ser-Gly-Thr-Pro[[-NH<sub>2</sub>]] [SEQ.ID.NO. 30];
- (iii) Val-Gly-Ser-Asn-Thr-Tyr[[-NH<sub>2</sub>]] [SEQ.ID.NO. 31];
- (iv) Val-Gly-Ser-Gly-Thr-Pro[[-NH<sub>2</sub>]] [SEQ.ID.NO. 32]; and

(h)  $Z_a$  is OH or NH<sub>2</sub>;

with the proviso that the compound does not have the formula of any of SEQ. ID. NOS. 14 to 26; and pharmaceutically acceptable salts thereof.

- 2. (Original) A compound according to claim 1 wherein  $Z_3$  is NH<sub>2</sub>.
- 3. (Original) A compound according to claim 1 wherein  $X_2$  is Gly.
- 4. (Original) A compound according to claim 3 wherein  $X_5$  is His or Aib.
- 5. (Currently Amended) A compound according to claim 4 wherein  $X_4$  is Ser-[[Glu]] Gln.
- 6. (Original) A compound according to claim 5 wherein  $X_7$  is Thr-Gly-Ser-Asn-Thr-Tyr [SEQ.ID.NO. 29] or Thr-Gly-Ser-Gly-Thr-Pro-NH<sub>2</sub> [SEQ.ID.NO. 30].
- 7. (Original) A compound according to claim 6 wherein  $X_1$  is  $Z_1$ -Ser-Thr- $Z_2$ -Val-Leu [SEQ.ID.NO.28].
- 8. (Original) A compound according to claim 7 wherein  $X_3$  and  $X_6$  are e-amidated with a carboxylic acid having 1 to 8 carbon atoms.
- 9. (Currently Amended) A compound according to claim [[9]] 1 wherein  $Z_1$  is an alkanoyl group having 1 to about 10 carbon atoms or Leu.

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10. (Original) A compound according to claim 9 wherein  $Z_2$  is Ala or Cys.
11. (Original) A compound according to claim 10 wherein  $Z_1$  is an alkanoyl group.
12. (Original) A compound according to claim 11 wherein  $X_3$  and  $X_6$  are formamidated or acetamidated.
13. (Original) A compound according to claim 12 wherein  $Z_2$  is Ala.
14. (Original) A compound according to claim 13 wherein  $X_3$  and  $X_6$  are Lys(For).
15. (Original) A compound according to claim 14 wherein  $Z_1$  is 4-methylpentanoyl.
16. (Currently Amended) A compound according to claim 1 which has an amino acid sequence selected from the group consisting of:

Leu-Ser-Thr-Cys-Val-Leu-Gly-Arg-Leu-Ser-Gln-Glu-Leu-His-Arg-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Asn-Thr-Tyr [SEQ.ID.NO. 1];

4-methylpentanoyl-Ser-Thr-Ala-Val-Leu-Aib-Lys(For)-Leu-Ser-Gln-Glu-Leu-Aib-Lys(For)-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Gly-Thr-Pro [SEQ.ID.NO. 2];

Ac-Leu-Ser-Thr-Ser-Val-Leu-Gly-Arg-Leu-Ser-Gln-Glu-Leu-His-Arg-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Asn-Thr-Tyr [SEQ.ID.NO. 3];

Leu-Ser-Thr-Ala-Val-Leu-Gly-Arg-Leu-Ser-Gln-Glu-Leu-His-Arg-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Asn-Thr-Tyr [SEQ.ID.NO. 4];

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Leu-Ser-Thr-Ser-Val-Leu-Gly-Arg-Leu-Ser-Gln-Glu-Leu-His-Arg-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Asn-Thr-Tyr [(I)] [SEQ.ID.NO. 5];

Ac-Leu-Ser-Thr-Ala-Val-Leu-Gly-Arg-Leu-Ser-Gln-Glu-Leu-His-Arg-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Asn-Thr-Tyr [SEQ.ID.NO. 6];

Ac-Leu-Ser-Thr-Cys-Val-Leu-Gly-Arg-Leu-Ser-Gln-Glu-Leu-His-Arg-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Asn-Thr-Tyr [SEQ.ID.NO. 7];

Val-Leu-Aib-Lys(For)-Leu-Ser-Gln-Gl-Leu-Aib-Lys(For)-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Asn-Thr-Tyr [SEQ.ID.NO. 8];

Ac-Val-Leu-Aib-Lys(For)-Leu-Ser-Gln-Glu-Leu-Aib-Lys(For)-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Asn-Thr-Tyr [SEQ.ID.NO. 9];

4-methylpendanoyl-Ser-Thr-Ala-Val-Leu-Aib-Lys(For)-Leu-Ser-Gln-Glu-Leu-Aib-Lys(For)-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Asn-Thr-Tyr [SEQ.ID.NO. 10];

4-methylpentanoyl-Ser-Thr-Cys-Val-Leu-Aib-Lys(For)-Leu-Ser-Gln-Glu-Leu-Aib-Lys(For)-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Asn-Thr-Tyr [SEQ.ID.NO. 11];

Ala-Thr-Aib-Lys(For)-Leu-Ala-Asn-Glu-Leu-Aib-Lys(For)-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Asn-Thr-Tyr [SEQ.ID.NO. 12]; and

Ac-Ala-Thr-Aib-Lys(For)-Leu-Ala-Asn-Glu-Leu-Aib-Lys(For)-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Asn-Thr-Tyr [SEQ.ID.NO. 13].

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17. (Original) The compound Leu-Ser-Thr-Cys-Val-Leu-Gly-Arg-Leu-Ser-Gln-Glu-Leu-His-Arg-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Asn-Thr-Tyr [SEQ.ID.NO. 1].

18. (Original) The compound 4-methylpentanoyl-Ser-Thr-Ala-Val-Leu-Aib-Lys(For)-Leu-Ser-Gln-Glu-Leu-Aib-Lys(For)-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Gly-Thr-Pro [SEQ.ID.NO. 2].

19. (Original) A composition comprising a compound of any of claims 1 to 18 in a pharmaceutically acceptable carrier.

20. (Withdrawn) A method of treating diabetes in a subject in need of treatment which comprises administering to said subject a therapeutically effective amount of a compound of any of claims 1, 2, 15, 16, 17 or 18.

21. (Withdrawn) A method according to claim 20 wherein said diabetes is type I diabetes.

22. (Withdrawn) A method according to claim 20 wherein said diabetes is type II diabetes.

23. (Withdrawn) A method of beneficially regulating gastrointestinal motility in a subject comprising administering to said subject a therapeutically effective amount of a compound of any of claims 1, 2, 15, 16, 17 or 18.

24. (Withdrawn) A method according to claim 23 wherein said beneficial regulation of gastrointestinal motility comprises delaying gastric emptying.

25. (Withdrawn) A method of treating a disorder selected from the group consisting of: impaired glucose tolerance; postprandial hyperglycemia; obesity; and Syndrome x; in a subject in need of treatment which comprises administering to said subject a therapeutically effective amount of a compound of any of claims 1, 2, 15, 16, 17 or 18.